REMARKS

Status of the Claims

Claims 1-8 and 10-16 are currently pending in the above identified application. Claim 9 has been canceled. Claims 12-16 have been added. Claims 1-8 and 10-11 have been amended to address the objections and rejections of the Office Action. No new matter has been added by the above claim amendments and new claims.

Claim Objections

The Examiner objects to claims 1-8 for not being in proper U.S. practice format. Applicants amend the claims to correct the informalities and dependency. As such the objections should be withdrawn.

Rejections under 35 USC 112, second paragraph

The Examiner rejects claims 1-7 and 9-11 as indefinite for reciting the phrase "such as", "preferably", "for example", "like" and "especially". Applicants amend the claims to delete the offensive wording. The Examiner also rejects the claims for not reciting the metes and bounds of the claimed invention. Applicants have amended the claims to correct any improper claim language. As such, the rejection should be withdrawn.

Rejection under 35 USC 101

The Examiner rejects claim 9 as an improper use claim. Applicants cancel claim 9, thus the rejection is overcome.

Rejection under 35 USC 102(b)

The Examiner rejects claim 1 as anticipated by Varaprasad et al. (Bioorganic Chemistry, vol. 14, pages 8-16 (1986). Applicants traverse the rejection and respectfully request the withdrawal thereof.

Distinctions between the Present Invention and Varaprasad

The present invention is directed to an aminooxy-cyclodextrin derivative and a method of preparing the same. The derivative of claim 1 is a protected aminooxy derivative. A protected aminooxy derivative means that a protecting group protects the amino on the structure during a reaction and then the group can be removed after it has completed its protecting function.

Varaprasad discloses a hydroxamic acid derivative, namely a N-hydroxy-succinic ester compound similar to the claimed compound derivative of claim 1. However, Varaprasad fails to disclose a protection group for the amino group. Moreover, there is no known way one of ordinary skill in the art could modify the compound of Varaprasad to obtain a free aminooxy

group. Hydrolysis of the Varaprasad compound generates free hydroaminic acid (-X-Y-OH). In fact, the Varaprasad reference is directed to this very subject.

No Anticipation

In order for Varaprasad to anticipate claim 1, each and every element of claim 1 must be disclosed in Varaprasad. The above distinctions demonstrate that Varaprasad does not disclose all the elements of claim 1 of the present invention. Particularly, the compound of Varaprasad does not contain an amino group protection group which is removed after it has functioned to protect the amino group in a reaction. In view of this major distinction, Applicants submit that the rejection should be withdrawn and the claims allowed.

Conclusion

As Applicant has addressed and overcome all objections and rejections, Applicant respectfully requests that the claims be allowed.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Kecia Reynolds (Reg. No. 47,021) at the telephone number of the undersigned below, to conduct an interview

in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

Version with Markings to Show Changes Made

Please cancel claim 9 without prejudice to or disclaimer of the subject matter contained therein.

Please amend the claims the as follows:

1. (Amended) Aminooxy-cyclodextrin derivatives of the formula 1:

$$CD - (X - Y - ONH_2)_n \ , \qquad (1)$$

wherein

CD is a mono- or polydeoxy α-, ß- or γ-cyclodextrin, carrying in its 6-, 3- and/or 2-position the aminooxy function containing group (X-Y-ONH_2), and optionally carrying further substituents different from (X-Y-ONH_2) in their 6-, 3- and/or 2-positions, and wherein Y is a linker group between the aminooxy group and the mono- or polydeoxy-CD-group,

X is a functional group or an atom necessary to connect the linker Y and the deoxy CD group, or Y is a direct bond when X is a direct bond, and

[and] n is greater than or equal to [≥] 1, but less than or equal to [≤] 18, 21 or 24 [24, 21 and 18] for α-, ß- or γ-cyclodextrin, respectively, as well as the aminooxy protected

derivatives thereof[, especially ethoxy-ethylidene protected aminooxy and acetone oxime derivatives thereof].

2. (Amended) The [A] derivative according to claim 1, wherein Y and X are both direct bonds.

3. (Amended) The [A] derivative according to claim 1 or 2, wherein one or more of the primary hydroxyl [hydroxy] groups at a 6-position of α-, ß- or γ-CD are substituted with a X-Y-ONH_2 fragment, wherein X and Y have the meaning of claim 1.

4. (Twice Amended) The [A] derivative according to claim 1, wherein Y is a linear or branched alkylene, alkenylene with one or more double bounds which may be either isolated or conjugated, alkynylene with one or more triple bonds which may be either isolated or conjugated, or arylene or arylalkylene fragments where aryl may be substituted or not substituted, whereby the alkylene, alkenylene and alkynylene fragments may be linear or branched [and preferably contain 2-12 C-atoms in the chain], and one or more of the chain members (methylene groups) may be replaced by -NH-, -O-, -S-, -S-S-, -C(O)NH, -C(O)O-, -OP(O)(OH)O-, -S(O)-, SO_2-, or -CHR-, where R is [preferably] alkyl, aryl, -OR', -NH_2, -NHR', -NR'$_2$, -OH, -COOH, or -ONH_2 groups and where R' is alkyl, aryl, or acyl.

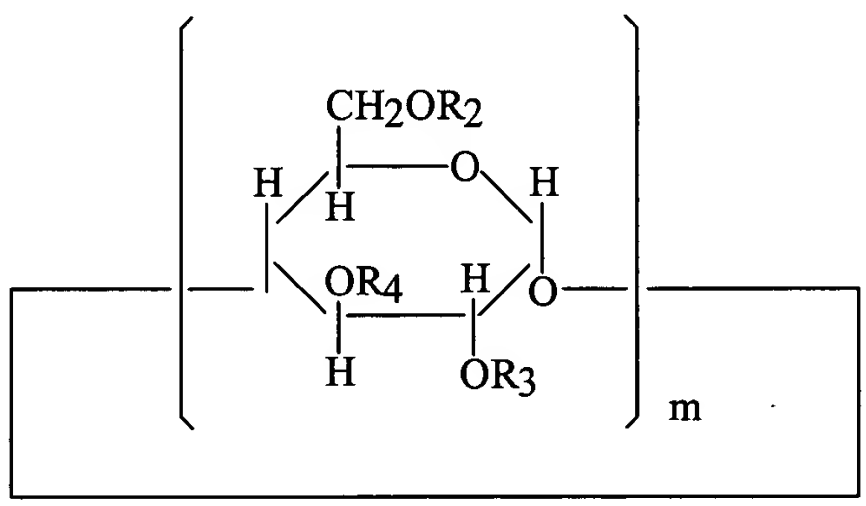
5. (Twice Amended) The [A] derivative according to [any one of the] claims 1 or [and] 4, wherein X is selected from the group consisting of -O-, -S-, -NH-, -NR"-, -OCO-, -NH-O-, =NO-, -NHC(O)-, -OP(O)(OH), and -R"C=NO-, where R" is linear or branched lower alkyl.

6. (Twice Amended) The [A] derivative according to [the claims] claim 4, wherein Y is alkylene containing 2-12 C-atoms, wherein one or more of the chain members may be replaced by -NH-, -O-, -S-, -C(O)NH-, -C(O)O-, or CHR_1 wherein R_1 is methyl, ethyl or propyl and X is -O-, -S-, -NH-, -OC(O)-, or [and] -NH-C(O)-.

7. (Twice Amended) The derivative [Any compound] according to claim 1, wherein one or more of the hydroxyl groups at 6-, 3-, and/or 2-position(s) are substituted with a group[, for example,] selected from the group consisting of H_2N-, HS-, -COOH, alkoxy-, [such as C_1-C_6-alkoxy-,] aryloxy-, [wherein aryl is preferably phenyl, benzyl or tolyl, or with] and acyloxy, [group, wherein acyl preferably originates from C_1 - C_6-carboxyl, or benzoic acids,] and wherein said alkoxyl-, aryloxy-, [alkyl-, aryl-,] and acyloxy- can [additionally] contain [functional groups like] H_2N-, HS-, or -COOH in their structure, [in] side chain or [in] aromatic ring.

8. (Amended) A method [Method according to claim 1 or 3] for preparing [compound] the derivative of claim 1 of formula 1, wherein X is [O] an oxygen atom, comprising the steps of: [and wherein:]

a) alkylating a cyclodextrin of formula (3) at one or more of the positions 6, 3, and/or 2 containing a hydroxyl group,



(3)

[including] wherein R_2, R_3, and R_4 are [hydroxyl groups] hydrogen or substituents selected from the group consisting of alkyl, aryl and acyl, and wherein said [defined in claim 7, exemplified by unsubstituted alkoxy, like C_1 - C_6- alkoxy or aryloxy like phenyl-, benzyl-, tolyl-, or acyloxy, in which] substituents' functional groups, if they exist, are protected whenever necessary, [whereby at least one of the positions 6, 3, and/or 2 contain hydroxyl group, preferably 6- hydroxy group, is alkylated]

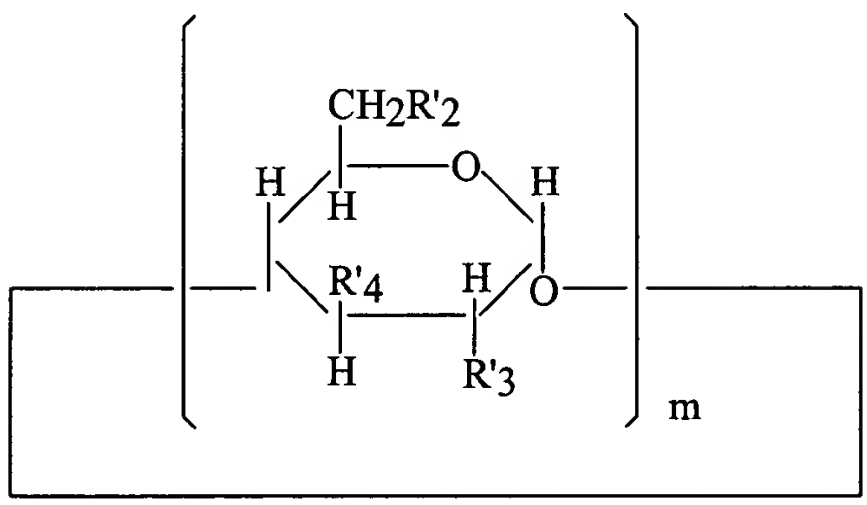
with a compound according to formula (3'):

$$Z - Y - ON = C(CH_3)\ W \qquad (3')$$

wherein W is [means group] $-OC_2H_5$ or $-CH_3$, m and Y are as defined in claim 1 [claims 1 or 3], and Z is a reactive group, [preferably Cl,

Br, I, tosyl, mesyl or epoxy group,] and optionally protecting group(s) is/are removed, or

b) <u>alkylating</u> a cyclodextrin derivative of formula (4) [is alkylated]



(4)

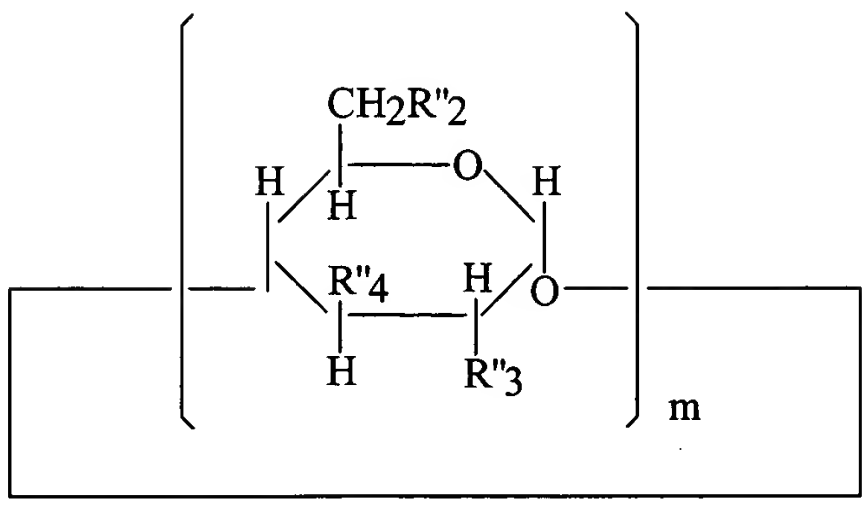
wherein R'_2, R'_3, R'_4 are hydroxy or activated groups [like] <u>selected from the group consisting of</u> tosyl, mesyl, halogen, ester[,] <u>and</u> epoxy[, preferably tosyl or halogen, possibly bound through a linker group, like alkylene,] or [substituent as defined in claim 7] said substituent being in a protected form if necessary, whereby the [CD-] <u>cyclodexrin</u> derivative contains at least one of said activated groups

with the compound of formula (4')

$$HX - Y- ON = C (CH_3) W \qquad (4')$$

wherein X and Y are as in <u>claims</u> [claim] 1, <u>4</u> or [as in 3 and] [4] <u>5</u>, [and X is preferably S or HN- fragment and Y has the meaning defined in claim 6,] and W is <u>$-OC_2H_5$ or $-CH_3$</u> [defined as above], and protecting group(s) is/are [possibly] removed if necessary, or

(c) reacting a cyclodextrin derivative of [compound with] formula (5)



(5)

wherein at least one of the groups R''$_2$, R''$_3$, and R''$_4$ [mean-] are thiol-, amino-, [karboxy-] carboxy-, [etc. group possibly linked directly to deoxy-CD-ring, or mean] or [alkylenoxy-] alkoxy-, aryloxy- or acyloxy groups which contain at least one thiol-, amino-, carboxy- [karboxy-, etc.] group, or their derivative, and the remaining functional groups are hydroxyl groups or they have the meaning described in claim 7 for the substituents, and exist, if necessary, in a protected form, [typical example being unsubstituted alkoxy, aryloxy, or acyloxy, modified] with an appropriate aminooxy protected substituted hydroxylamine according to formula (3'), after which the protecting group(s) are removed, or

(d) reacting a cyclodextrine derivative [CD-derivative] of formula (5), which contains one or more of keto or aldehyde groups, [possibly bound through a linker group, is allowed to react]

with bisaminooxy alkanes of formula (5')

$H_2NO\ (CH_2)_tONH_2$ (5')

wherein t is 2-12, and wherein one of the methylene groups can be substituted with oxygen or sulfur atom, or wherein -NH- or -S-S- groups, and a protecting group is removed if necessary.

10. (Amended) An oxime created from [Oximes of] any one of the aminooxy-CDs of claim 1 by reacting said aminooxy-CDs with [a] synthetic or natural aldehydes or ketones.

11. (Amended) Derivatives of nucleotide or nucleoside pyrimidines or purines with aminooxy-CDs, wherein said aminooxy group is linked to the heterocyclic ring of said pyrimidines or purines [, preferably through pyrimidine C-4 and purine C-6, and wherein pyrimidine and purine are preferably cytosine or adenine as such or as their derivatives].

Claims 12-16 are added.